

**DEPARTMENT OF ENVIRONMENTAL QUALITY  
WATER PROTECTION BUREAU  
Metcalf Building, Helena, Montana 59620  
(406) 444-3080**

**ENVIRONMENTAL ASSESSMENT (EA)**

**Division/Bureau:** Permitting & Compliance Division, MGWPCS Permits;

**Project or Application:** HLH, LLC; MGWPCS Permit No. MTX000129

**Description of Project:** The renewed permit authorizes the discharge of treated residential-strength wastewater from Firelight Meadows Subdivision (FMS), located near Big Sky, Montana. The subdivision is composed of 136 duplex-quadrplexes and 80 condominiums. Three community systems collect, treat, and dispose of the wastewater/effluent from this development. The wastewater receives Level II treatment in recirculating sand filters prior to discharging the effluent to the subsurface drainfields. The average daily flow for the treatment system that discharges to Outfall 001A and 002B is 9,945 gallons per day (gpd), each. The average daily flow for the treatment system that discharges to Outfall 003C is 13,160 gallons per day (gpd). The location of Outfalls 001A and 002B is 45° 15' 04" North latitude and 111° 19' 03" West longitude, in the northwest corner of the development. Modified, 220-foot ground water mixing zones will be permitted for each of these outfalls. The location of Outfall 003C is 45° 15' 04" North latitude and 111° 18' 57" West longitude, in the northeast corner of the development. A modified, 140-foot ground water mixing zone will be permitted for this outfall. The discharge is to ground water, which is classified "Class I" by the Montana Groundwater Quality Standards.

**Benefits and Purpose of Proposal:**

Adequate treatment of residential-strength wastewater before discharging to ground water.

**Description and analysis of reasonable alternatives whenever alternatives are reasonably available and prudent to consider:**

None

**Listing and appropriate evaluation of mitigation, stipulations and other controls enforceable by this or another government agency:**

See Fact Sheet

**Affected Environment and Effects from the Proposed Project:**

<b><u>Key to Rank</u></b>	
NA	<i>Not applicable</i>
N	<i>No effects</i>
B	<i>Potentially beneficial effects</i>
A	<i>Potentially adverse effects</i>
M	<i>Corrective action required</i>
P	<i>Additional permits will be required</i>

Rank	Consideration	Remarks
<b>PHYSICAL AND BIOLOGICAL ENVIRONMENT</b>		
N	1. SOIL SUITABILITY, TOPOGRAPHIC AND/OR GEOLOGIC CONSTRAINTS (soil moisture, unstable soils or geologic conditions, steep slopes, erosion potential, subsidence potential, seismic activity)	Discharge will increase moisture in the unsaturated zone. No known low permeability layers exist between the drainfield and the shallow ground water. The area is seismically active, but the site is not within any known active (or formerly active) landslide areas. The topography in this area is relatively flat (0.028 ft/ft or less) across the drainfields.

N	2.	HAZARDOUS FACILITIES (power lines, hazardous waste sites, distances from explosive and flammable hazards including chemical/petroleum storage tanks, underground fuel storage tanks and related facilities such as natural gas storage facilities and propane tanks)	
N	3.	AIR QUALITY (effects to or from project, dust, odors, emissions)	No significant impacts have been determined.
N	4.	GROUNDWATER RESOURCES & AQUIFERS (quality/nondegradation, quantity/reliability, distribution, uses/rights, number of aquifers, mixing zones)	There will be no significant degradation outside of the mixing zones for outfall 001A, 002B, and 003C (see Statement of Basis for details and calculations).
N	5.	SURFACE WATER RESOURCES (quality/nondegradation, quantity/reliability, distribution, uses/rights, storm water controls, source of community supply, community treatment, mixing zones)	The nearest hydraulically downgradient surface water is the South Fork of the West Fork of the Gallatin River. Outfall 003C is approximately 2,000 from the river. Impacts to surface waters were determined non-significant (see Statement of Basis for details and calculations).
N	6.	VEGETATION AND WILDLIFE SPECIES AND HABITATS, INCLUDING FISHERIES AND AQUATIC RESOURCES (threatened, endangered, sensitive species, prime habitat, population stability, potential for human wildlife conflicts, effectiveness of post-disturbance plans)	
N	7.	UNIQUE, ENDANGERED, FRAGILE, OR LIMITED ENVIRONMENTAL RESOURCES (biologic, topographic, wetlands (within one mile), floodplains (within one mile), scenic rivers, natural resource areas, etc.)	
N	8.	LAND USE (waste disposal, agricultural lands [grazing, cropland, forest lands, prime farmland], recreational lands [waterways, parks, playgrounds, open space, federal lands), access, commercial and industrial facilities [production & activity, growth or decline], growth, land-use change, development activity)	Outfall 001A and 002B are in open space within the development. Outfall 003C is within the condominium development area.
N	9.	HISTORICAL, CULTURAL, & ARCHEOLOGICAL (sites, facilities, uniqueness, diversity)	No new construction is associated with this permit renewal.
N	10.	AESTHETICS (visual quality, nuisances, odors, noise)	Community septic tanks, recirculating sand filters (RSFs), and drainfields are subsurface and are not visible and will not create aesthetic issues.
N	11.	DEMANDS ON OR CHANGES IN ENVIRONMENTAL RESOURCES INCLUDING LAND, WATER, AIR, OR ENERGY USE (need for new or upgraded energy sources, potential for recycling, etc.) {See (4), (5), and (8).}	Potable water is provided onsite via two deep (approximately 230 to 310 feet deep) domestic supply wells completed in the confined bedrock aquifer.

Rank	Consideration	Remarks
<b>IMPACTS ON THE HUMAN POPULATION</b>		
NA	12. CHANGES IN DEMOGRAPHIC CHARACTERISTICS (population quantity, distribution and density, rate of change)	No changes in the development are associated with this permit renewal.
N	13. GENERAL HOUSING CONDITIONS (quality, quantity and affordability)	Existing duplex-quadrplexes (136 units) and condominiums (80 units).
NA	14. POTENTIAL FOR DISPLACEMENT OR RELOCATION OF BUSINESS OR RESIDENTS	
N	15. PUBLIC HEALTH AND SAFETY (medical services and facilities, police, fire protection and hazards [see (2)], emergency medical services [see (8), LAND USE for waste disposal])	
N	16. LOCAL EMPLOYMENT AND INCOME PATTERNS (quantity and distribution of employment, economic impact)	
NA	17. LOCAL AND STATE TAX BASE AND REVENUES	
NA	18. EFFECTS ON SOCIAL STRUCTURES AND MORES (social conventions/standards of social conduct), DEMANDS ON SOCIAL SERVICES (law enforcement, educational facilities [libraries, schools, colleges, universities], welfare, etc.)	
NA	19. TRANSPORTATION NETWORK (condition and use of roads, traffic flow conflicts, rail, airport compatibility, etc.)	
N	20. CONSISTENCY WITH LOCAL ORDINANCES, RESOLUTIONS, OR PLANS (conformance with local comprehensive plans, zoning or capital improvement plans)	
N	21. REGULATORY RESTRICTIONS ON PRIVATE PROPERTY RIGHTS ( <i>Are we regulating pursuant to a police power? Does the Agency action restrict the use of the property beyond the minimum necessary to achieve compliance with the Act? What are the costs of such additional restrictions resulting from proposed permit conditions? Are there other, less restrictive ways of achieving the same goal? See your assigned legal counsel for assistance preparing this section. [See the Private Property Assessment Act checklist accompanying this permit for details.]</i> )	

**Other groups or governmental agencies contacted or which may have overlapping jurisdiction:**  
 Permitting & Compliance Division, Subdivisions Bureau and Public Water Supply

**Public Involvement:**  
 Thirty-day public comment period

**Individuals or groups contributing to this EA:**  
Gallatin County

**Summary of Issues:**  
See Fact Sheet

**Summary of Potential Effects:**  
See Fact Sheet

**Cumulative Effects:**  
There are multiple ground water mixing zones for nitrate (as N). The modified mixing zones do not overlap. There are no unresolved analyses for cumulative effects.

**Recommendation:**  
Issue Ground Water Discharge Permit

**Recommendation for Further Environmental Analysis:**

☐ Prepare an EIS                      ☐ Prepare a more detailed EA                      ☒ No further analysis

EA prepared by: Pat Potts

Date: October 26, 2007

**Bureau Check-off**

AWMB \_\_\_\_\_  
IEMB \_\_\_\_\_

CSB \_\_\_\_\_  
WPB \_\_\_\_\_

EMB \_\_\_\_\_  
Other \_\_\_\_\_

**Approved by:**

Bonnie Lovelace, Chief  
Water Protection Bureau  
Permitting & Compliance Division

(Print name and title)

\_\_\_\_\_  
(Signature)

\_\_\_\_\_  
(Date)